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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,959	12/03/2004	Tatsuo Shimizu	042-201	6172

35870 7590 07/10/2006

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EXAMINER

WILLS, MONIQUE M

ART UNIT PAPER NUMBER

1745

DATE MAILED: 07/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/516,959	SHIMIZU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Monique M. Wills	1745	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-10,12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-10,12 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

This Office Action is responsive to the Amendment filed March 27, 2006.

The following rejections are maintained:

- Claims 5-6 & 9-10 under 35 U.S.C. 102(e) as being anticipated by Vitins et al. U.S. Patent 6,667,131.
- Claims 7-8 & 12-13 under 35 U.S.C. 103(a) as being unpatentable over Vitins et al. U.S. Patent 6,667,131 as applied to claims 5 & 9-10 above, and further in view of Goda et al. U.S. Pub. 2003/0143466.

Claims 5-10 & 12-13 are newly rejected under 35 USC 112, first paragraph. The rejections are recited below.

#### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 5-10 & 12-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the

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inventor(s), at the time the application was filed, had possession of the claimed invention. The appears to be no support in the specification for “ ball in a ball mill without a binder” . An appropriate correction is required.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 5-6 & 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Vitins et al. U.S. Patent 6,667,131.

In re claim 5, Vitins teaches a lithium rechargeable battery (abstract), comprising: a current collecting material (col. 9, line 49);  $\text{LiMn}_2\text{O}_4$  composite active material, stirred and mixed with Shawinigan Black conductive material by

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ball milling, forming a conductor-mixed active electrode material; and an electrode structure with electrode mixture formed on a surface of the current collecting material. See Example 4.

With respect to claim 6, the electrode material is lithium mangante,  $\text{LiMn}_2\text{O}_4$  (col. 9, lines 40-45), and the conductive material is Shawinigan Black carbon (col. 9, line 45).

In re claim 9, Vitins teaches a method of making a lithium rechargeable battery, comprising the steps of: making a conductor-mixed active electrode material by stirring and mixing  $\text{Li}_2\text{Co}_{0.4}\text{Mn}_{1.6}\text{O}_4$ /  $\text{LiMn}_2\text{O}_4$  and carbon black with hard balls, and attaching, by a binder, the conductor-mixed active material onto an aluminum current collector. See Example 4.

With respect to claim 10, the electrode material is lithium mangante,  $\text{LiMn}_2\text{O}_4$  (col. 9, lines 40-45), and the conductive material is Shawinigan Black carbon (col. 9, line 45).

Therefore, Vitins anticipates the instant claims.

*Claim Rejections – 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

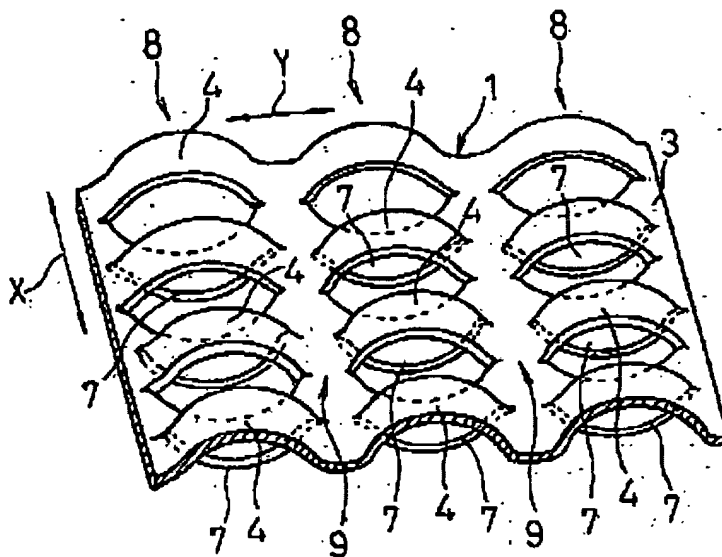
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vitins et al. U.S. Patent 6,667,131 as applied to claims 5 & 9-10 above, and further in view of Goda et al. U.S. Pub. 2003/0143466.

Vitins teaches a lithium rechargeable battery as described in the § 102(e) rejection recited hereinabove. With respect to claim 8, Vitins teaches a binder that anchors the electrode material to an aluminum current collector (See Example 4).

However, Vitins is silent to a current collector having more than one recess portion (claim 7).

Goda teaches an aluminum current collector (¶ 32) comprising a plurality of recesses. See Figure 2. Goda is concerned with reducing inner short-circuiting and created three-dimensional current collector properties.

**Fig. 2**

Therefore, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the recessed current collector of Goda, in the battery of Vitins, to reduce inner short-circuiting and achieve three-dimension current collector properties.

As to a current collector layer being made of an electrically conduction assistant (claim 8), it is reasonable to expect the aluminum collector of Vitins to provide such assistance, because the collector is made from the same aluminum material set forth in the instant disclosure at paragraph 40. In accordance with MPEP 2112.01 “ [p]roducts of identical chemical composition can not have mutually exclusive properties.” A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure,

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the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, in the instant case, the electrical conduction assistance of the Vitins aluminum collector is necessarily present.

### *Response to Arguments*

Applicant's arguments with respect to claims 5-10 have been considered but are moot in view of the new matter rejection. Applicant asserts that Vitins and Goda do not, alone, or in combination, teaches the instant claims including obtaining the conductor mixed material with "one hard ball in a ball mill without a binder". There is no support in the specification for the exclusion of a binder. Therefore, the rejection are maintained.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply



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is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Patrick Ryan, may be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**PATRICK JOSEPH RYAN**  
**SUPERVISORY PATENT EXAMINER**

MW

06/12/06